Abstract

The present invention provides methods for detecting a nucleic acid fragment and/or PNA fragment having a mutation, which performs the detection by binding a labeled substance specifically binding to a mismatched base pair such as Mut S to a mismatched base pair produced by hybridization of a fragment of nucleic acid or the like fixed on a substrate and a nucleic acid fragment or the like of which mutation should be assayed, and identifying a fragment bound by the substance; methods for detecting a nucleic acid fragment and/or PNA fragment having a mutation, which performs the detection by treating a mismatched base pair produced between the hybridized fragments with a substance specifically recognizing and cleaving a mismatched base pair instead of the substance specifically binding to a mismatched base pair to cleave or remove the fragments hybridized from the mismatched base pair, labeling a fragment remained on the substrate after the cleavage or removal, and detecting the labeled fragment; and labeled substances specifically bindable to a mismatched base pair such as Mut S labeled with GFP. According to the present invention, it is possible to simultaneously detect structural mutations in a plurality of genes, in particular, it is possible to detect the structural mutations while simultaneously monitoring expression levels thereof.